

of the Patent Office, so that any person using due diligence might easily learn with tolerable certainty whether an invention were new or old, which is not now the case.

We beg to append a sample page of such two subject-matter indexes as we would submit are urgently required. It is almost superfluous to mention that there are now several hundred thousands of pounds accumulated surplus, and an annual surplus of about sixty thousand pounds, contributed by the very class of persons who would benefit by such improved indexes.

L. L. DILLWYN, M.P.

RICHARD BAGGALLAY, M.P.

CHARLES FOX, Mem. Inst. C.E.

CHARLES HUTTON GREGORY, President Inst. C.E.

EDWARD WOODS, Mem. Inst. C.E.

C. WILLIAM SIEMENS, Mem. Inst. C.E., F.R.S.

ROBERT MALLET, Mem. Inst. C.E., F.R.S.

FREDERICK J. BRAMWELL, Mem. Inst. C.E. Council.

EDWARD A. COWPER, Mem. Inst. C.E.

20th March, 1868.

(Copy of Reply of the Master of the Rolls to Mr. Dillwyn.)

Rolls, 31st March, 1868.

Sir,—I transmitted to the Lord Chancellor the memorial presented to me on the 20th March instant by yourself and the gentlemen who accompanied you, relative to the present state of the Patent Office, together with my views on the subject; and we have since considered the matter in consultation together.

The result of this is that we are prepared to recommend to her Majesty's Government that three gentlemen should be appointed to act as Commissioners of Patents together with the Lord Chancellor and the Master of the Rolls for the time being—one to represent mechanical science, another to represent chemical science, and a third to represent the subjects more usually and more especially comprised in the term "Natural Philosophy." We should propose that the gentlemen to be recommended to her Majesty for this purpose should be, as regards the first, from gentlemen to be nominated by the Society of Mechanical Engineers; as regards the second, from gentlemen to be nominated by the Chemical Society; and as regards the third, from gentlemen to be nominated by the Council of the Royal Society. But we are not prepared to recommend that any salary should be attached to the services of these gentlemen. We trust and believe that gentlemen fully competent for the purpose may be found who have sufficient leisure, and who, from their love of science and their desire to disseminate more widely the discoveries made in these branches of science, would be willing to give their services without remuneration, and to superintend the general management of the Patent Office, to see that the indexes and abstracts of the specifications are made accurate and complete, and to redress the other defects complained of in your memorial, acting in all these respects in conjunction with the Lord Chancellor and the Master of the Rolls, to whom they would refer whenever the occasion might require it.

I think it, however, desirable to repeat that, on fully considering the subject, both the Lord Chancellor and myself have arrived at the same conclusion, that it would be inexpedient to create either one or more salaried officers for this purpose; and to say that we should both, if applied to, recommend her Majesty's Government not to accede to that part of the views of the gentlemen who composed the deputation, which had relation to the creation of paid officers.

L. L. Dillwyn, Esq., M.P.

ROMILLY.

#### FRANCIS KIERNAN, F.R.S.

WE have to record the death, on Dec. 31st last, of Mr. Francis Kiernan, whose discoveries in connection with the structure of and circulation through the liver, published in the Philosophical Transactions of the Royal Society, and separately in a work entitled "Anatomical Researches on the Structure of the Liver," are so well known to all physiologists and histologists.

Mr. Kiernan was born in Ireland on October 2nd, 1800. His father was a member of the medical profession, who came to this country during his son's younger days. The son was educated at the Roman Catholic College at Ware, in Hertfordshire, and received his medical training at St. Bartholomew's Hospital, where, as a student, he gave

signs of marked ability, devoting all his energies to the study of anatomy. In 1825 he obtained the membership of the College of Surgeons, and the Fellowship in 1843. In 1834 he was elected a Fellow of the Royal Society, subsequently receiving the Copley Medal.

Mr. Kiernan was amongst those most actively engaged in the establishment of the University of London, of the Senate of which institution, on its incorporation in 1837, he became a member, and subsequently a frequent examiner in his special subjects. He was never married. In 1865 he was seized with a paralytic stroke, from the effects of which he never fully recovered.

The investigations of Mr. Kiernan on the liver, together with those of Mr. Bowman on the kidney, will be always looked back to by biologists as the first-fruits of the introduction to natural science of the microscope in its modern form. Unlike many such productions, however, they have both fully stood the test of time.

#### THE RECENT THAW

THE thaw of January 1, 1875, happened almost simultaneously in Paris and London, and the phenomenon having been observed in both cities, it is possible to come to a definite conclusion concerning many similar occurrences.

The exact hour of the change in Paris may be stated to have been nine o'clock in the evening. If we suppose it was four o'clock in London, we see that five hours were a sufficient space of time for the gale to run the distance between both cities—about 300 miles.

Telegraphic warnings had been sent from London to the Paris Observatory, but were of little practical use, for want of proper means to disseminate the intelligence: otherwise, many inconveniences which were experienced by the Parisians, surprised by the falling of sleety snow, would have been avoided.

This remarkable occurrence may be referred to as affording strong evidence in favour of extending and popularising in both countries the use of weather telegrams. But I think it may be useful to try to draw from these circumstances some other conclusions.

In January 1871 I inquired of M. Buys Ballot, now the president of the Utrecht Meteorological Office, if he could tell me how to foresee if winds were likely to take a favourable course for ballooning from Lille to besieged Paris. I was told by the learned meteorologist to look at the upper clouds, as any real change must of necessity take place in the upper strata of the atmosphere, and descend gradually to the earth.

Unfortunately these upper clouds were for days and days running from the south, and the opportunity of trying an ascent was lost. Before the sudden thaw of the 24th of December, as well as before the 1st of January, I saw other clouds taking distinctly the same northern course. It seemed to me that the motion of the upper strata was communicated gradually to the air in closer proximity to the earth, and that the meteorological revolution of the 1st of January was preceded by a great change produced in higher regions through some unknown cause.

My conclusion seems to me to be supported by the fact that the air was obscured by vapours before the thaw actually took place. The sun lost apparently almost all his warming power, as the difference between *minima* and *maxima* read at the Observatory of Paris at the end of the cold periods amounted to a very few centesimal degrees—three or four only; clear air and hot sun being, if the theory is supported by facts, an evidence that cold weather is to last for a long period. It seems that the upper current is produced by cold and dry air coming from the north and pushed southwards.

It would be interesting to submit the theory to the test

of systematic ascents, in order to inquire into the condition of the upper winds, and to measure their deflection or velocity, or their dimensions either in vertical or in horizontal directions.

Some of the readers of NATURE may possibly feel inclined to help me in working out these suggestions practically, or at least to ascertain if they are justified by facts as far as can be ascertained without travelling in the air.

W. DE FONVIELLE

### EARTHQUAKES IN THE PHILIPPINE ISLANDS

A CORRESPONDENCE from Manila, dated Oct. 17-18, gives the following notice of earthquakes occurring there and in the neighbourhood on Oct. 16, which may be of interest to some readers of NATURE :—

#### Manila.

10.12 A.M.—Hard shock; duration about 1 min.; general direction from E.—W., but moving from S.E.—N.W. to N.E.—S.W.

10.15 A.M.—E. 25° N.—W. 25° S.; duration 5 sec.; rotation from E.—N.

10.20 A.M. till 10.15 P.M.—Thirty-seven other light shocks, *i.e.* in the whole thirty-nine shocks in twelve hours.

The interval of these shocks became at last greater and greater in the following order :—

10.20 A.M.	11.20 A.M.	12.2 P.M.	12.55 P.M.
10.25 "	11.23 "	12.19 "	1.9 "
10.30 "	11.26 "	12.20 "	1.52 "
10.40 "	11.31 "	12.22 "	2.40 "
10.43 "	11.34 "	12.24 "	4.2 "
10.46 "	11.41 "	12.31 "	6.25 "
10.50 "	11.44 "	12.42 "	8.15 "
10.51 "	11.46 "	12.45 "	9.15 "
11.12 "	11.58 "	12.50 "	10.15 "
11.15 "			

#### Bulacan.

10.8 A.M.—Hard shock.

10.11 A.M. till 1 P.M.—Lighter shocks.

#### Pampanga.

10.13 A.M.—N.W.—S.E. Hard shock; duration 50 sec.

10.21 A.M.—Duration 20 sec.

12.30 P.M.—Light shock.

#### Pangasinan.

10.25 A.M.—S.E.—N.W. Duration 26 sec; light shock.

#### Cavite.

10.11 A.M.—Light shock.

10.45 A.M.—Light shock.

12.13 P.M.—Light shock.

#### [Batangas.

10.2 A.M.—E.—W. Two shocks, of 10 sec. and 7 sec. duration.

#### Laguna.

Light shock; 2 sec. duration.

Royal Natural Hist. Museum,  
Dresden, Dec. 25

A. B. MEYER

### THE TRANSIT OF VENUS

THE following telegrams have been received during the past week :—

From Prof. Peters, *viâ* Wellington, New Zealand :—

"Transit observation great success first contact; photographs, 237."

"New York, Dec. 31.—Intelligence has been received here from Honolulu, dated the 12th inst., respecting the

observations of the Transit of Venus at that station. The atmospheric conditions were favourable for the observations; 150 measures of cusps and limbs and 60 photographs were obtained. A totally unexpected appearance was presented at the internal contact. The disc of the planet became visible as an entire circle some minutes before contact, and from then to the complete establishment no definite or sudden phase was observed. There was no black drop after the internal contact. Twenty out of sixty photographs came out blurred. Valuable results, however, were obtained. The first external contact occurred at 3h. 7m., and the first internal contact at two minutes later than the *British Nautical Almanack* stated. The revelation of the complete circle of the planet occurred before the actual internal contact, owing to the effulgence of the corona, the sun illuminating the whole surface of Venus before the complete immersion."

In connection with the news from Honolulu, an article in the *Times* of Tuesday says :—"The most remarkable part about it is that the observers evidently regarded as an 'unexpected appearance' a phenomenon similar to one observed and recorded in the former transits of 1761 and 1769. In the observations of Chappe d'Aueroche in the latter year, recorded by Cassini, a drawing is actually given of the horns of Venus visible beyond the edge of the sun, and it seems probable from the text that the planet was actually seen on the sun's chromosphere at the moment of egress."

Indeed, this phenomenon need not have caused any surprise if the conditions had been previously clearly understood. In reference to this point, some statements from the *Daily News* Thebes correspondent (Dec. 9) are worth quoting. In speaking of the commencement of the phenomenon the correspondent says Venus "appeared anything but a promising subject for the purpose at first. She seemed literally to dance about the face of the sun, and her limb was jagged like a saw. They both appeared elliptical in an almost extraordinary degree, owing of course to refraction, and they did not lose it entirely till they were at least 7° from the horizon. Gradually the limbs of both got more and more defined, till Venus looked like a small black pea resting on a luminous disc. The sun, however, still remained somewhat troublesome, particularly to the photographers, and it was not till just before internal contact that he was really steady. The atmosphere of Venus was distinctly seen at certain periods. It showed as a pale white circle round part of her edge, and was totally different to the brilliant sunlight. The general remark was that it reminded us of moonlight. This caused a certain difficulty in estimating the true time of contacts, and perhaps any small discrepancy in observation may be accounted for by this phenomenon. . . . There is one curious coincidence to note, and that is, that no one seemed to have observed the black drop which has been so much talked about; a faint haze was seen, and a few jets of black springing out from each side of the point of contact, but nothing more. Neither in the photographs did it show, which perhaps might have been expected. Certainly, the weather could not have been more favourable just at the critical time, though, curiously enough, immediately after, a haze came on, which would seriously have affected the results. Need I say that we are all thankful the observation has passed off so well, and if only the other stations to which expeditions have been sent are equally fortunate, the sun's distance ought to be definitely settled. I fully expect that the appearance of the faint line will give rise to a long discussion in the astronomical world. It will be very curious to note what other stations saw. At all events one thing is certain, and that is that our atmosphere must have been very clear, and also that of Venus; clouds in the planet must have intercepted the sunlight, and have prevented the formation of the luminous ring, or rather partial ring. At one time the whole planet, when